

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF TEXAS  
DALLAS DIVISIONGENERAL ELECTRIC COMPANY,  
Plaintiff,

v.

MITSUBISHI HEAVY INDUSTRIES,  
LTD. ET AL.,  
Defendants.§  
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CLERK, U.S. DISTRICT COURT  
By *M.J.* Deputy *9:49 a.m.*  
CIV. ACTION NO. 3:10-CV-276-F

FEB - 8 2012

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**ORDER DENYING DEFENDANTS' MOTION FOR SUMMARY JUDGMENT  
REGARDING U.S. PATENT NO. 7,629,705**

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BEFORE THE COURT is Defendants Mitsubishi Heavy Industries, Ltd.'s and Mitsubishi Power Systems Americas, Inc.'s (collectively "Mitsubishi") Motion for Summary Judgment Regarding U.S. Patent No. 7,629,705 (Doc. No. 378), filed on December 2, 2011. Plaintiff General Electric Company ("GE") filed a Response on December 29, 2011 (Doc. No. 397), and Mitsubishi filed a Reply on January 12, 2012 (Doc. No. 423). After considering the parties' briefs and reviewing the evidence, the Court finds that there are genuine issues of material fact and that Defendants are not entitled to judgment as a matter of law. Accordingly, Defendants' Motion for Summary Judgment is DENIED.<sup>1</sup>

**I. Factual and Procedural Background**

This case presents a dispute over the alleged infringement of two patents relating to wind-turbine technology. U.S. Patent No. 7,629,705 ("the '705 patent"), entitled

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<sup>1</sup> This resolves Doc. No. 378.

“METHOD AND APPARATUS FOR OPERATING ELECTRICAL MACHINES,” describes a method of allowing a wind turbine to remain connected to the utility grid during voltage disturbances, including disturbances down to zero volts. The United States Patent and Trademark Office (“PTO”) issued the ‘705 patent to GE on December 8, 2009. In February of 2010 GE filed suit, alleging that Mitsubishi’s wind turbines infringe Claim 1 of the ‘705 patent. Claim 1 provides as follows:

1. A method for operating an electrical machine, said method comprising:

coupling the electrical machine to an electric power system such that the electric power system is configured to transmit at least one phase of electric power to the electrical machine; and

configuring the electrical machine such that the electrical machine remains electrically connected to the electric power system during and subsequent to a voltage amplitude of the electric power system operating outside of a predetermined range for an undetermined period of time, said configuring the electrical machine comprising:

electrically coupling at least a portion of a control system to at least a portion of the electric power system;

coupling the control system in electronic data communication with at least a portion of the electrical machine; and

configuring the electrical machine and the control system such that the electrical machine remains electrically connected to the electric power system during and subsequent to the voltage amplitude of the electric power system decreasing below the predetermined range including approximately zero volts for the undetermined period of time, thereby facilitating zero voltage ride through (ZVRT).

In the instant Motion, Mitsubishi presents four independent grounds for summary judgment.

## II. Legal Standard:

Summary judgment is appropriate if the evidence shows there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); *Barmag Barmer Maschinenfabrik AG v. Murata Machinery, Ltd.*, 731 F.2d 831 (Fed. Cir. 1984). In the summary judgment process, both movants and non-movants bear burdens of proof. *See generally Celotex Corp. v. Catrett*, 477 U.S. 317 (1986). The movant with the burden of proof at trial must establish every essential element of its claim or affirmative defense. *Id.* at 322–23. The moving party without the burden of proof need only point to the absence of evidence on an essential element of the non-movant’s claims or affirmative defenses. *Id.* at 323. At that point, the burden shifts to the non-moving party to produce evidence in support of its claims or affirmative defenses. *Id.* at 324. The non-moving party must produce “specific facts” showing a genuine issue for trial and not mere general allegations. Fed. R. Civ. P. 56(e); *Tubacex v. M/V Risan*, 45 F.3d 951, 954 (5th Cir. 1995). It is important to note that “[n]either ‘conclusory allegations’ nor ‘unsubstantiated assertions’ will satisfy the non-movant’s burden.” *Wallace v. Tex. Tech Univ.*, 80 F.3d 1042, 1047 (5th Cir. 1996). In deciding whether to grant summary judgment, the Court should view the evidence in the light most favorable to the party opposing summary judgment and indulge all reasonable inferences in favor of that party. *In re Katrina Canal Breaches Litig.*, 495 F.3d 191, 205–06 (5th Cir. 2007). “The standard of review is not merely whether there is a sufficient factual dispute to permit the case to go forward, but whether a rational trier of fact could find for the non-moving party based upon the record evidence before the court.” *James v. Sadler*, 909 F.2d 834, 837 (5th Cir. 1990) (citing *Matsushita Elec. Indus. Co. v. Zenith Radio*

*Corp.*, 475 U.S. 574, 586 (1986)). To the extent that facts are undisputed, the Court may resolve the case as a matter of law. *Blackwell v. Barton*, 34 F.3d 298, 301 (5th Cir. 1994).

### III. Application

#### A. Noninfringement

First, Mitsubishi contends it is entitled to judgment as a matter of law because the accused technology does not infringe Claim 1 of the '705 patent. "To establish infringement of a patent, every limitation set forth in a claim must be found in an accused product or process exactly or by a substantial equivalent." *Becton Dickinson and Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 797 (Fed. Cir. 1990). "[I]nfringement, either literal or under the doctrine of equivalents, is a question of fact." *Townsend Engineering Co. v. Hitec Co., Ltd.*, 829 F.2d 1086, 1089. Summary judgment of noninfringement is appropriate "where the claims do not read on the accused structure to establish literal infringement and a prosecution history estoppel makes clear that no actual infringement under the doctrine of equivalents can be found." *Id.* (quoting *Brenner v. United States*, 773 F.2d 306, 307 (Fed. Cir. 1985)).

The patent requires that the wind turbine be configured to remain connected during and after grid-voltage fluctuations for "an undetermined period of time." '705 patent, cl. 1. In its *Markman* Order, the Court construed "an undetermined period of time" as "an indeterminable or unknowable period of time." Claim Construction Order 15, May 9, 2011 (Doc. No. 155). Mitsubishi explains that its wind turbine "is set up to ride through grid disturbances lasting less than a predetermined period of time and to

disconnect whenever a grid disturbance lasts longer than that predetermined period of time.” Defs.’ Mot., at 1. Therefore, Mitsubishi argues, its wind turbine does not literally infringe because it is not configured to remain connected during and subsequent to grid-voltage fluctuations that last for “an undetermined period of time.” GE counters that the Court rejected Mitsubishi’s position during claim construction. Pl.’s Resp. at 8. The Court agrees with GE.

During the claim construction stage of this litigation, Mitsubishi argued that the phrase “undetermined period of time” referred to the period of time when the machine remains connected to the electric power system when the voltage is outside the range. Ct.’s Order, at 10. The Court expressly rejected that construction, stating that the “undetermined period of time” refers “to the voltage fluctuation taking place on the grid itself,” and not the connection between the grid and the wind turbine. Ct.’s Order, at 14. As such, the Court has already determined that the claim term “undetermined period of time” does not necessarily foreclose wind turbines that impose limits on the period of time the machine remains connected while the voltage is outside of the predefined range. Therefore, the Court cannot decide as a matter of law that Mitsubishi’s turbines do not infringe the patent literally or under the doctrine of equivalents.

## **B. On-Sale Bar**

Second, Mitsubishi argues that it is entitled to summary judgment of invalidity because GE offered to sell the patented technology more than a year before submitting the application to the Patent Office, in violation of 35 U.S.C. § 102(b), commonly known as the “on-sale bar.” 35 U.S.C. § 102(b) provides: “A person shall be entitled to a patent

unless . . . (b) the invention was . . . “on sale in this country, more than one year prior to the date of the application for patent in the United States.” 35 U.S.C. § 102(b) (2006). In *Pfaff v. Wells Elecs., Inc.*, the Supreme Court explained, “the on-sale bar applies when two conditions are satisfied before the critical date. First, the product must be the subject of a commercial offer for sale . . . Second, the invention must be ready for patenting.” *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 67 (1998). Because issued patents are presumed valid, the party asserting the on-sale bar as a defense to infringement bears the burden of showing invalidity by clear and convincing evidence. *Atlantic Thermoplastics Co., Inv. v. Faytex Corp.*, 970 F.2d 834, 836 (Fed. Cir. 1992).

The parties do not dispute that GE filed the application for the ‘705 patent on October 20, 2006 and that the critical date for the on-sale bar analysis is October 20, 2005. It is also undisputed that GE entered into a two sales contracts for turbines that would remain connected to the grid during voltage fluctuations prior to the critical date. However, the parties do dispute the subject matter of those contracts and the patentability of the technology GE had developed prior to the critical date.

#### *1. The Subject of a Commercial Offer for Sale*

In order to determine whether there was a commercial offer for sale, a court must determine whether (1) there was a “commercial offer,” and 2) that the offer was for the patented invention. *Scaltech, Inc. v. Retec/Tetra, L.L.C.*, 269 F.3d 1321, 1328 (Fed. Cir. 2001). The sale is for the patented invention only if the product sold “fully anticipated the claimed invention or would have rendered the claimed invention obvious by its

addition to the prior art.” *Tec Air, Inc. v. Denso Mfr. Michigan Inc.*, 192 F.3d 1353, 1358 (Fed. Cir. 1999).

The only argument GE proffers in support of its contention that the invention described in claim 1 of the ‘705 patent was not the subject matter of its commercial offers for sale before the critical date is that it had not developed the claimed technology at the time of sale. However, a claimed invention need not be completed by the time of sale in order for the product to be the “subject matter” of the commercial offer. *Robotic Vision Sys. v. View Eng’g, Inc.*, 249 F.3d 1307, 1313 (Fed. Cir. 2001) (finding that the on-sale bar was “triggered by a prior commercial offer for sale and a subsequent enabling disclosure that demonstrated that the invention was ready for patenting prior to the critical date”). Indeed, the invention need only be “conceived” at the time of sale in order for it to qualify as the subject matter of the offer for sale for purposes of the first prong of the *Pfaff* test. *August Tech. Corp. v. Camtek, Ltd.*, 655 F.3d 1278 (Fed. Cir. 2011); *Pfaff*, 525 U.S. at 60 (“[The] word ‘invention’ in the Patent Act unquestionably refers to the inventor’s conception.”).

GE broadly describes claim 1 of the ‘705 patent as “requir[ing] coupling a control system that is in electronic data communication with an electrical machine and configuring the control system and the electrical machine such that the electrical machine remains connected to electric power system during and subsequent to voltage of the electric power system dropping to zero volts.” GE Resp., at 10. In response to an interrogatory, GE represented that it conceived of “the subject matter of the ‘705 patent . . . at least as early as January 2005.” App. to Mitsubishi’s Mot., at 299. GE’s

offer letters and supply agreements stated “that GE would build wind turbines that could remain connected during zero voltage events for the duration desired by the customer.”

GE Resp., at 11–12. GE does not dispute that the technology described in claim 1 of the ‘705 patent is the same technology ultimately installed to facilitate ZVRT in the wind turbines it offered for sale before the critical date. It argues merely that because the contracts did not list the specific method of facilitating ZVRT and because GE had not yet developed that technology, it was not the subject matter of the sales. In support of its position, GE presents evidence that 1) the sales contracts did not contain language specifically describing the method by which ZVRT would be facilitated in the wind turbines; 2) that GE was funding a “New Product Introduction Program” for the purpose of developing wind turbines with ZVRT capability at the time it executed the contracts for sale; and 3) that it had not yet developed the validated source code that was ultimately approved for use in the turbines. However, this evidence merely affirms that GE had conceived of, was actively developing, and intended to use the technology claimed in claim 1 of the ‘705 patent by the time of sale, and that this technology was the subject matter of the sales contracts GE entered into before the critical date. Therefore, the Court decides as a matter of law that claim 1 of the ‘705 patent was the subject of a commercial offer for sale before the critical date.

## *2. Ready for Patenting*

GE further argues that the technology described in claim 1 was not ready for patenting before the critical date. The “ready for patenting” prong may be satisfied in two ways: “by proof of reduction to practice before the critical date; or by proof that prior

to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention.” *Pfaff*, 525 U.S. at 67. While GE’s arguments with respect to the extent to which the technology in Claim 1 of the ‘705 patent cannot avoid judgment as a matter of law on the first prong of the *Pfaff* test, they do work to create a genuine issue of material fact with respect to the second.

i. Reduction to Practice

“To demonstrate reduction to practice, a party must prove that the inventor (1) constructed an embodiment or performed a process that met all the limitations and (2) determined that the invention would work for its intended purpose.” *In re Omeprazole Patent Litig.*, 536 F.3d 1361, 1373 (Fed. Cir. 2008) (quoting *Z4 Techs., Inc. v. Microsoft Corp.*, 507 F.3d 1340, 1352 (Fed. Cir. 2007) (internal quotation marks omitted)). GE argues that the technology described in claim 1 of the ‘705 patent was not ready for patenting because laboratory testing of the technology that took place after the critical date revealed “that the machine was failing and unexpectedly tripping offline during certain zero voltage events.” GE Resp., at 21. Mitsubishi does not appear to dispute that applying the legal standard governing “reduction to practice” prong of the *Pfaff* test GE has created a genuine issue of material fact. Mitsubishi argues instead that GE falls short on the second prong of the “ready for patenting” test from *Pfaff*.

ii. Enablement

Mitsubishi argues that the technology sold was ready for patenting notwithstanding any subsequent testing because GE had developed detailed drawings and

descriptions of the technology that would have enabled a person of ordinary skill in the art to practice the invention before the critical date. GE counters that any pre-critical date concepts would not have enabled a person of ordinary skill in the art to practice the invention because after the post-critical date tests revealed flaws in their method, GE's inventors modified the machine "to include the converter shutdown to facilitate zero voltage ride through." *Id.* GE further offers expert testimony that the pre-critical date descriptions of the invention did not include the "exemplary gain and limit values disclosed in the '705 specification," that would be required for a person of ordinary skill in the art to practice the invention. *Id.* at 25–26.

Drawing every inference in favor of GE as the non-moving party and holding Mitsubishi to its burden of proving invalidity by clear and convincing evidence, the Court concludes that GE has presented sufficient evidence to establish genuine issues of material fact with respect to whether the technology described in claim 1 was ready for patenting before the critical date. Accordingly, Mitsubishi is not entitled to judgment as a matter of law on the ground that the on-sale bar renders the '705 patent invalid.

### **C. Lack of Enablement**

Third, Mitsubishi argues that it is entitled to summary judgment of invalidity because claim 1 of the '705 patent is broader than its disclosure. 35 U.S.C. § 112 provides that a patent specification must "enable a person of ordinary skill in the art to make and use the full scope of the invention without undue experimentation." 35 U.S.C. § 112 (2006). "Whether undue experimentation is needed is not a single, simple factual

determination, but rather is a conclusion reached by weighing many factual considerations,” including:

- (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

*In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). The party asserting that a claim is not enabled bears the burden of showing invalidity by clear and convincing evidence. *Boston Scientific Corp. v. Johnson & Johnson*, 647 F.3d 1353, 1361 (Fed. Cir. 2011).

Mitsubishi argues claim 1 does not enable a person of ordinary skill in the art to facilitate ZVRT without using a PLL state machine. Mitsubishi asserts that the testimony of Einer Larsen, one of GE’s inventors, that he “do[esn’t] see how” it would be possible to provide zero voltage ride through without using a PLL state machine is clear and convincing evidence that a person of ordinary skill in the art would not be able “to make and use the full scope of the invention without undue experimentation.” Mitsubishi Mot. at 27.

GE counters that in so arguing, Mitsubishi is trying to restrict the patent to its preferred embodiment, which includes the PLL state machine. GE further argues that Mitsubishi has not presented clear and convincing evidence that claim 1 is invalid for lack of enablement. Specifically, GE points to the fact that Mitsubishi has proffered no evidence suggesting that claim 1 teaches away from facilitating ZVRT without the use of a PLL state machine, and no evidence that undue experimentation would be necessary to

achieve ZVRT without a PLL state machine. GE further argues that Mitsubishi's contention that Mr. Larsen's testimony proves that even one of great skill in the art could not make full use of the invention without undue experimentation is unfounded because GE's inventors had no need to experiment with other methods of achieving ZVRT after they accomplished their desired result with a PLL state machine.

The Court agrees with GE. Mitsubishi has not presented clear and convincing evidence demonstrating that claim 1 is not enabled. Questions of fact regarding how much experimentation by a person of ordinary skill in the art would be required to make and use the full scope of the invention, whether the patent teaches toward or away from use of a PLL state machine, and the scope of the claim language abound. Accordingly, Mitsubishi is not entitled to summary judgment of invalidity for lack of enablement.

#### **D. Prior Art**

Finally, Mitsubishi argues that claim 1 of the '705 patent is invalid as anticipated by prior art. To show that a patent claim is invalid as anticipated, the party challenging the patent must show that a single prior art reference expressly or inherently discloses each and every element of a claimed invention. *Finisar Corp. v. DirecTV Grp. Inc.*, 523 F.3d 1323, 1334–35 (Fed. Cir. 2008). Anticipation further requires that the prior art disclose all elements of the claimed invention arranged as in the claim. *Id.* As with all claims that a patent is invalid, the party challenging the patent must come forward with clear and convincing evidence of invalidity. *Cordance Corp. v. Amazon.com, Inc.*, 658 F.3d 1330, 1337 (Fed. Cir. 2011). This burden is made heavier still where the claim of invalidity is based on prior art that was before the patent examiner charged with

reviewing the patent at issue. *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359 (Fed. Cir. 1984).

Mitsubishi contends that the Nielsen patent application anticipates every limitation of claim 1 of the '705 patent. Both the '705 patent and the Nielsen reference disclose the use of a doubly-fed induction generator, with a stator that is directly connected to the grid and a rotor that is connected to the grid through a power conversion assembly. Mitsubishi argues the Nielsen reference anticipates claim 1 of the '705 patent because the power conversion assembly remains connected to the grid during voltage fluctuations.

GE counters that the Nielsen patent application teaches away from the '705 patent because in the Nielsen reference, the stator disconnects from the grid during voltage disturbances and reconnects when the grid recovers, while the '705 patent teaches that the whole of the electrical machine remains connected to the grid during and subsequent to voltage disturbances. Accordingly, GE argues, the Nielsen reference does not anticipate every limitation of claim 1 of the '705 patent. GE further argues that the fact that the same examiner who allowed claim 1 of the '705 patent also reviewed the U.S. counterpart of the Nielsen reference adds weight to Mitsubishi's already heavy burden of producing clear and convincing evidence of invalidity.

The Court finds that Mitsubishi has not established invalidity by clear and convincing evidence. A genuine issue of material fact exists as to whether the Nielsen patent application anticipates the type of connectivity recited by claim 1 of the '705 patent. Therefore, Mitsubishi is not entitled to judgment as a matter of law that claim 1 is invalid as anticipated by the Nielsen reference.

**IV. Conclusion**

For the aforementioned reasons, Mitsubishi's Motion for Summary Judgment of Noninfringement and Invalidity of Claim 1 of U.S. Patent No. 7,629,705 is DENIED.

IT IS SO ORDERED.

Signed this 8<sup>th</sup> day of February, 2012.

  
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Royal Furgeson  
United States Senior District Judge